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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,627	07/24/2003	Shinichi Yatsuzuka	01-450	9051

23400 7590 10/11/2006

POSZ LAW GROUP, PLC
12040 SOUTH LAKES DRIVE
SUITE 101
RESTON, VA 20191

EXAMINER

COMAS, YAHVEH

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

10

Office Action Summary	Application No. 10/625,627	Applicant(s) YATSUZUKA ET AL.	
	Examiner Yahveh Comas	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 8 and 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 3-5, 8 and 10-16 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1, 3-4 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatsuzuka et al. U.S. Patent No. 6,138,459 in view of Yatsuzuka U.S. Patent No. 6,499,978 in further view of ACKERMANN DE Patent No. 4216938A.

Yatsuzuka '459 discloses a plurality of teeth (130) circumferentially disposed to surround a space; a yoke (133) disposed around the teeth and magnetically connected to the teeth (130), a plurality of coils (131 and 132) mounted on the teeth, and a movable core disposed in the space opposite the teeth to reciprocate transversely to the teeth, said movable core (120) having a plurality of first permanent magnets (122) at axially opposite ends for providing a respectively plurality of pair magnetic poles on a peripheral surface of each end thereof to face the surfaces of the teeth and a magnet shielding plate disposed at axially middle portion thereof to magnetically separate the permanent magnets (122) disposed at one end thereof from the permanent magnets (122) disposed at the other end thereof. Also permanent magnets are respectively disposed on the opposite sides of the shielding means in the axial direction. A movable core further comprising a plurality of magnetic inductors (124), wherein said first permanent magnet (122) are disposed around a center of a plane that is perpendicular to the reciprocating direction of said movable core and polarized in directions perpendicular to the reciprocating direction, and said magnetic inductors (124) are disposed between said first permanent magnet in the direction perpendicular to the reciprocating direction. Yatsuzuka '459 disclose the claimed invention except for said movable core having as many inductors as stator teeth.

However, Yatsuzuka '978 disclose the use of more than one pair of pole teeth (131-134) wherein magnets (119-122) having a radial arrangement are provided for each tooth in order to effectively increases a density of magnetic flux passing through an electromagnet unit to impart an increased thrust force to a piston forming part of the

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linear compressor. The magnets have a rolled surface disposed in parallel to a direction of motion of said movable core (115).

Regarding the movable core having permanent magnets instead of permanent magnets between pole pieces or magnetic inductors, ACKERMANN (figures 12-16) shows that having permanent magnet or permanent magnets (7) between pole pieces or magnetic inductors is an equivalent structure known in the art. Therefore, because these two structures providing circumferential flux path were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute permanent magnets for permanent magnets between pole pieces or magnetic inductors.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to use more than one pair of stator teeth facing a permanent magnet since that would have been desirable in order to effectively increase a density of magnetic flux passing through an electromagnet unit to impart an increased thrust force to a piston forming part of the linear compressors, as disclosed by Yatsuzuka '978.

2. Claims 8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatsuzuka et al. U.S. Patent No. 6,138,459 in view of Yatsuzuka U.S. Patent No. 6,499,978, in view of ACKERMANN DE Patent No. 4216938A and in further view of Yarr et al. U.S. Patent No. 5,389,844.

Yatsuzuka, as applied above, discloses the claimed invention except for said first magnets project from said inductors to be located between the adjacent teeth, said coils

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connected to an ac power source to reciprocate said movable core or to generate electric power. However Yarr discloses a linear machine having extended magnets between the stator teeth in order to provide a linear alternators/motors with and reduce the size, cost and weight of the alternator/motor.

Therefore it would have been obvious to one having skill in the art at the time the invention was made to modify Yatsuzuka's invention and provide linear electrodynamics machine working as a motor connected to an ac power source or a generator having magnets projections located between the adjacent teeth since that would be desirable for reduce the size, cost and weight of said alternator/motor.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yatsuzuka et al. U.S. Patent No. 6,138,459 in view of Yatsuzuka U.S. Patent No. 6,499,978, in view of ACKERMANN DE Patent No. 4216938A and in further view of Hazelton U.S. Patent No. 6,313,551.

Yatsuzuka in view of Nashiki discloses the claimed invention except for said magnetic shield comprising a second permanent magnet that opposite polarity to the first permanent magnets. However, Hazelton discloses a shaft made of a first permanent magnets (40) and a second permanent magnet (42) that opposite polarity to the first permanent magnets in order to improved the flux density.

Therefore it would have been obvious to one having skill in the art at the time the invention was made to modify Yatsuzuka's invention and provide a shaft having a magnetic shield comprising a second permanent magnet that opposite polarity to the first permanent magnets in order to improved the flux density.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

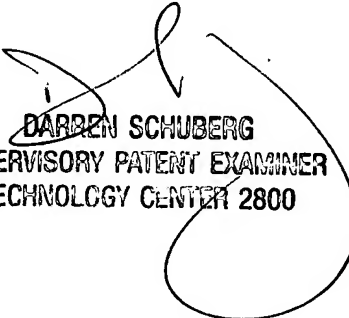
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yahveh Comas whose telephone number is (571)272-2020. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YC


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